

Expendable Guided Dropsonde, Phase I

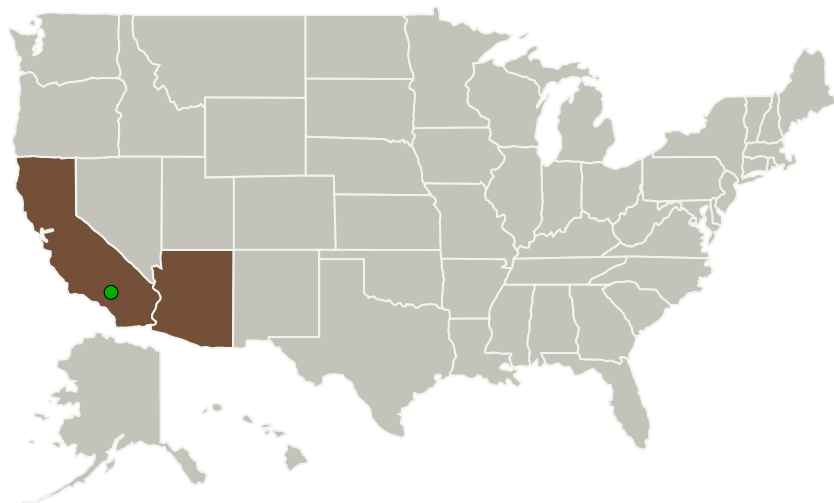
Completed Technology Project (2011 - 2011)



Project Introduction

Given the constraints associated with current airborne host platforms, a technological solution is needed for efficiently obtaining meteorological data at targeted locations and altitudes. A combination of using manned and unmanned aircraft with guided dropsondes is a promising and achievable path forward for meeting this need. Guided dropsondes have significant implications to advance research in nearly all scientific disciplines requiring in situ atmospheric measurements. Compared to conventional free-fall dropsondes that rely on parachutes, guided dropsondes could offer speed controlled descents combined with loiter abilities. This can potentially yield time averaged data for a particular region—a feature not currently available with current dropsonde technology. The guided dropsonde's ability to move to targeted areas of interest gains sensors an unprecedented level of access to extreme areas and events. Being able to move to a designated area will also offer the potential to retrieve the guided dropsonde, giving it the capability to become an in situ sampler. For volcanic eruptions or pollution studies, this can become a powerful new tool where few options, if any, currently exist.

Primary U.S. Work Locations and Key Partners



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Organizations Performing Work	Role	Type	Location
Latitude Engineering	Lead Organization	Industry	Tucson, Arizona
● Armstrong Flight Research Center(AFRC)	Supporting Organization	NASA Center	Edwards, California

Primary U.S. Work Locations	
Arizona	California

Project Transitions

**February 2011:** Project Start**September 2011:** Closed out**Closeout Documentation:**

- Final Summary Chart(<https://techport.nasa.gov/file/138144>)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Latitude Engineering

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

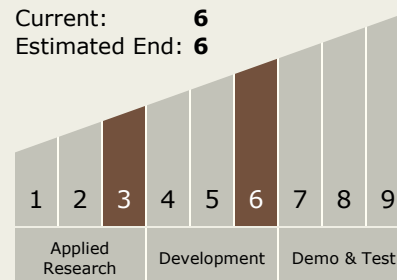
Carlos Torrez

Principal Investigator:

Jason M Douglas

Technology Maturity (TRL)

Start: 3
 Current: 6
 Estimated End: 6



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Technology Areas

Primary:

- TX09 Entry, Descent, and Landing
 - └ TX09.2 Descent
 - └ TX09.2.1 Aerodynamic Decelerators

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System